UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,736	12/05/2003	Vittorio Castelli	YOR920030355US1 (8728-642	1339

46069   7590   09/09/2008
F. CHAU & ASSOCIATES, LLC
130 WOODBURY ROAD
WOODBURY, NY 11797

EXAMINER
DAO, THUY CHAN

ART UNIT	PAPER NUMBER
2192	

MAIL DATE	DELIVERY MODE
09/09/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

		Application No.	Applicant(s)	
Office Action Summary		10/729,736	CASTELLI ET AL.	
		Examiner	Art Unit	
		Thuy Dao	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

> A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _03_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
> - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
> - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
> - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
> Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *20 June 2008*.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1 and 4-18* is/are pending in the application.

  4a) Of the above claim(s) *20* is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1 and 4-18* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *05 December 2003* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

  a) ☐ All   b) ☐ Some *   c) ☐ None of:

  1. ☐ Certified copies of the priority documents have been received.

  2. ☐ Certified copies of the priority documents have been received in Application No. _____.

  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
  Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
  Paper No(s)/Mail Date. _____

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to the amendment filed on June 20, 2008.

2. Claims 1 and 4-18 have been examined.

Response to Amendments

3. In the instant amendment, claims 1 and 18 have been amended; claim 20 has been canceled.

Response to Arguments

4. Applicants' arguments have been considered. However, they are not persuasive.

The Applicants added new limitations and asserted,

> "...Therefore, Lau fails to teach all the limitations of
> Claims 1 and 18, more particularly, "computing a set of possible
> alignments and generalizations based on the procedural model"
> (Remarks, page 8, emphasis added).

The examiner respectfully disagrees. In the originally filed disclosure, the Applicants clearly defined,

> "Referring now to FIG. 2, a method 200 is illustrated
> wherein the procedure model described in FIG. 1 is a probabilistic
> model based on Markovian assumptions. Each step of the
> procedure model is conditionally independent of the steps
> preceding the previous step, given the previous step ..." (page 14,
> lines 10-13, emphasis added).

In light of the originally filed disclosure, Lau explicitly teaches:

> *determining a procedural model based on the alignment* (e.g., page 28,
section Probabilistic framework; page 29, a set of specific version spaces V (a procedural model) for different applications; also page 29, priori probabilities provided

by application designers;   page 38, version spaces (a procedural model) used in application SMARTedit);

> *computing a set of possible alignments and generalizations based on the procedural model* (e.g., page 38, in SMARTedit application, computing possible alignments and generalizations based on determined version spaces, which are given in Appendix A, pp. 106-110; page 42, each of SMARTedit's predictions is drawn from the hypothesis space constructed using given version spaces).

In conclusion, the examiner respectfully maintains ground of the 35 USC §102(b) rejection over claims 1 and 4-18 in view of Lau.

Claim Rejections – 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, and 4-18 are rejected under 35 U.S.C. 102(b) as being anticipated by "Programming by Demonstration: a Machine Learning Approach" to Tessa Lau, published 2001 (art made of record, hereafter "Lau").

Claim 1:

Lau discloses a machine-readable storage medium and *a method for generating one or more computer-executable procedures, comprising the steps of:*

> *recording at least one trace of at least one instance of a procedure, wherein the at least one trace comprises a plurality of steps* (e.g., pp. 38-39, Figure 4.1, recording a plurality of traces of a procedure in SMARTedit such as removing tags and all text inside comments of a HTML file, wherein each trace comprises a plurality of user actions such as copying, pasting, cutting, positioning cursor, selecting regions*);*

performing an alignment and generalization of the plurality of steps (e.g., pp. 39-40, Figures 4.2 and 4.3, recording and aligning traces (sequence of user actions) and generalizing them as training examples for SMARTedit),

wherein the alignment identifies and aligns steps that are equivalent once generalized (e.g., page 40, once generalized, each procedures (training example) consists of a sequence of identified and aligned steps (user actions)),

determining a procedural model based on the alignment (e.g., page 28, section Probabilistic framework; page 29, specific version spaces V (a procedural model) for different applications; also page 29, priori probabilities provided by application designers; page 38, version spaces (a procedural model) used in application SMARTedit);

computing a set of possible alignments and generalizations based on the procedural model (e.g., page 38, in SMARTedit application, computing possible alignments and generalizations based on determined version spaces, which are given in Appendix A, pp. 106-110; page 30, section 3.6.4 "Probabilistic models" computing probability; page 42, each of SMARTedit's predictions is drawn from the hypothesis space constructed using our version space algebra)*, and*

selecting an updated alignment and an updated generalization from the set of possible alignments and generalizations according to an alignment-generalization functional (e.g., pp. 40-41, SMARTedit selects incorrect guess and/or correct guess as updated alignments/generalization; page 70)

that determines a rate at which the steps of the procedure are correctly predicted for the set possible alignments and generalizations (e.g., page 40, SMARTedit selecting an incorrect guess with 36% probability, page 41, SMARTedit selecting a correct guess with 93% probability)*; and*

generating the one or more computer-executable procedures consistent with the updated alignment and the updated generalization (e.g., pp. 85-86, SMARTedit reaching 100% accuracy and generating a correct procedure from a plurality of traces/training examples; page 42, SMARTedit has learned the correct program as the procedure consistent with the updated alignment/generalization).

Claim 4:

The rejection of claim 1 is incorporated. Lau also discloses *the alignment-generalization functional selects an alignment having a greatest number of correctly predicted steps according to a procedure model* (e.g., page 41, SMARTedit selecting a correct guess with 93% probability).

Claim 5:

The rejection of claim 1 is incorporated. Lau also discloses *the alignment-generalization functional selects a generalization having a greatest number of correctly generalized steps according to a procedure model* (e.g., pp. 85-86, SMARTedit reaching 100% accuracy and generating a correct procedure from a plurality of traces/training examples).

Claim 6:

The rejection of claim 1 is incorporated. Lau also discloses *the alignment-generalization functional is a monotonically increasing function of an alignment functional and a generalization functional* (e.g., page 86, Figure 6.6).

Claim 7:

The rejection of claim 6 is incorporated. Lau also discloses *the monotonically increasing function selects the alignment and the generalization from the set of possible alignments and generalizations that maximized a linearly increasing function of the alignment functional and the generalization functional* (e.g., page 86, Figure 6.6 with a specific number of training examples, SMARTedit chooses the highest accuracy probability over 25 runs).

Claim 8:

The rejection of claim 1 is incorporated. Lau also discloses *the alignment-generalization functional is maximized using an optimization technique* (e.g., pp. 39-40, SMARTedit iteratively predicts and receives feedback from user).

Claim 9:

The rejection of claim 8 is incorporated. Lau also discloses *applying the optimization technique iteratively* (e.g., page 41, SMARTedit iteratively tries another guess).

Claim 10:

The rejection of claim 9 is incorporated. Lau also discloses *the optimization technique is a gradient-descent technique* (e.g., page 44, Figure 4.7, SMARTedit uses a version space as a gradient-descent technique).

Claim 11:

The rejection of claim 1 is incorporated. Lau also discloses *simultaneously performing an alignment and generalization of the at least one trace further comprises the steps of: computing an initial alignment and generalization of the at least one trace; generating a procedure model of the initial alignment; and computing a best alignment and generalization of the procedure model* (e.g., page 69, Figure 5.3, computing by iterating).

Claim 12:

The rejection of claim 11 is incorporated. Lau also discloses *repeating the steps of determining the initial alignment, generating the procedure model, and determining the best alignment until a local optimum is detected* (e.g., pp. 85-86, SMARTedit reaching highest accuracy by iteratively runs a number of training examples).

Claim 13:

The rejection of claim 11 is incorporated. Lau also discloses *generating a procedure model of the initial alignment comprises generating a Hidden Markov Model of the initial alignment* (e.g., page 36).

Claim 14:

The rejection of claim 13 is incorporated. Lau also discloses *generating a Hidden Markov Model of the initial alignment comprises generating an Input/Output Hidden Markov Model of the initial alignment* (e.g., pp. 76-77).

Claim 15:

The rejection of claim 1 is incorporated. Lau also discloses *simultaneously performing an alignment and generalization of the at least one trace further comprises the steps of: determining an initial alignment and generalization of the at least one trace; generating a transition model and an action model of the initial alignment and generalization; and determining a best alignment of the transition model and the action model* (e.g., pp. 39-42).

Claim 16:

The rejection of claim 15 is incorporated. Lau also discloses *repeating the steps of determining the initial alignment, generating the transition model and the action model, and determining the best alignment until a convergence is detected* (e.g., page 85-86).

Claim 17:

The rejection of claim 15 is incorporated. Lau also discloses *generating a transition model and an action model of the initial alignment and generalization comprises generating a transition model for at least one node and an action model for the at least one node* (e.g., page 81, section 6.4.2).

Claim 18:

Claim 18 recites the same limitations as those of claim 1, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the reference teaches all of the limitations of the above claim, it also teaches all of the limitations of claim 18.

Conclusion

7. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication should be directed to examiner Thuy Dao (Twee), whose telephone/fax numbers are (571) 272 8570 and (571) 273 8570, respectively. The examiner can normally be reached on every Tuesday, Thursday, and Friday from 6:00AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam, can be reached at (571) 272 3695.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is (571) 272 2100.

        Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system.   Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).

/Thuy Dao/   /Tuan Q. Dam/
Examiner, Art Unit 2192   Supervisory Patent Examiner, Art Unit 2192